

REMARKS

Claims 1-15 are pending in this application. Claims 1-4, 6-9, and 11-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,140,198 to Atherly et al. (hereinafter "Atherly") in view of U.S. Patent No. 5,438,301 to Havens et al. (hereinafter "Havens"). The Examiner has indicated that claims 5 and 10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

By the foregoing amendments, Applicant has amended Figure 1 of the drawings to include the legend "Prior Art," per the Examiner's requirement. Applicant has amended claims 1, 4, and 5 so that amended claim 1 includes the main features of original claims 4 and 5, and amended claims 4 and 5 contain additional features. Applicant has amended claims 7, 9, and 10 so that amended claim 7 includes the main features of original claims 9 and 10, and amended claims 9 and 10 contain additional features. Applicant has also amended the specification to correct typographical errors and has amended the claims to clarify the language used therein.

Atherly discloses an image-rejecting mixer circuit 10 having an input buffer 12, a local oscillator 29, and two mixers 22, 24. A received signal is passed via the input buffer 12 to the mixers 22, 24. The local oscillator 29 signal is passed directly to the mixer 22, where it is mixed with the received signal to produce the in-phase

(I) component. The local oscillator 29 signal is also phase shifted by 90° in phase shifter 32 and is passed to mixer 24, where the signal is mixed with the received signal to produce the quadrature phase (Q) component. The Q component is phase shifted by 90° in phase shifter 42, and is summed with the I component in summing circuit 40. This operation is identical to that described as prior art in the present application. Accordingly, the circuit 10 of Atherly also has the same drawbacks as the prior art described in the present application, namely, that the phase difference between the carrier signal produced by the local oscillator and the quadrature carrier signal may not be maintained at an ideal 90° ; see page 4, lines 1-4 of the present application.

Havens discloses a carrier generator circuit including a voltage controlled oscillator (VCO) 110 that produces balanced signals which are sent to a phase corrector 112. The phase corrector 112 produces the I and Q signal components. The VCO 110 is constructed as an N-stage ring oscillator.

The Examiner's position is that it would have been obvious to one of ordinary skill in the art to replace the oscillator and phase shift circuit of Atherly with a ring oscillator, such as the one disclosed in Havens. However, there is no suggestion in either reference to combine them to create the invention of the present application. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of

the combination.” (MPEP, §2143.01, citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990), emphasis in original.)

A statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.” (MPEP §2143.01, citing *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993), emphasis in original.)

Because there is no suggestion in either reference to combine them, the invention as defined in claim 13 of the present application is not obvious, and should therefore be allowable. Because the independent claim (i.e., claim 13) should be allowable over the cited references, the dependent claims (i.e., claims 14 and 15) should also be allowable, and no additional discussion of the dependent claims should be necessary. The Examiner has indicated that claims 1 and 7 as presently amended (to include the features of original claims 4-5 and 9-10, respectively) should also be allowable.

It is respectfully submitted that the amendments and remarks made herein place pending claims 1-15 in condition for allowance. Accordingly, entry of this amendment as well as reconsideration and allowance of pending claims 1-15 are respectfully requested.

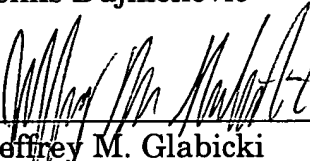
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Application No.: 09/669,274

If the Examiner does not believe that the claims are in condition for allowance, the Examiner is respectfully requested to contact the undersigned at 215-568-6400.

Respectfully submitted,

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